

REMARKS

Entry of the foregoing and reexamination and reconsideration of the subject application, as amended, pursuant to and consistent with 37 C.F.R. § 116, are respectfully requested in light of the following remarks.

Claims 44-49 are pending in this application. Claims 1-43, 50 and 51 were previously cancelled.

Claim 44 and 45 have been amended to clarify the claim and to recite the weight ratio of true dimer units/ total of all components comprising isocyanate functions is $\leq 15\%$. Support for this amendment is found in the specification at least on page 20, line 2-8 and in the examples. No new matter has been added in making this amendment.

Statement of Interview Summary

Applicants gratefully acknowledge the telephonic interview with Examiner Sergeant on August 25, 2009. Prior to the interview, applicants had provided calculations regarding the compositions in EP 325941. The calculations provided were based on the teachings in EP 325941 that the NCO content is from 20 to 24 weight % and the uretidinedione group (calculated as $C_2N_2O_2$) is from 4 to 20 weight % and that the diisocyanates used have molecular weights in the range of 140 to 300. The calculations were made to show how the extremes of the ranges taught in EP 325941 would not meet the requirements of the claims of the instant application. Examiner Sergeant requested that the calculations be performed for the examples in

EP 325941 and that a statement be provided as to how the term "isocyanate functions" should be interpreted.

35 U.S.C. §102 prior art rejections

Claims 44-49 have been rejected under 35 U.S.C. §102(b) as being anticipated by EP 325941.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (MPEP 2131).

The Office Action indicates that:

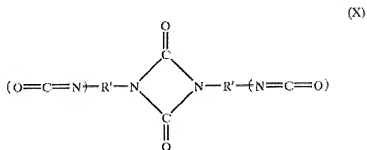
The reference discloses polyisocyanates and their reaction with polyester/polyacrylate polyols to yield polyurethanes, wherein the polyisocyanates have contents of uretidinedione groups and biuret groups that are considered to meet applicants' claims. See entire document, especially abstract and examples. (page 2, paragraph 2)

Applicants note that EP 325941 is in German and that an English language abstract was provided with a previous Office Action. In the response to the previous Office Action, Applicants obtained an English language machine-translation of EP0325941 using the translate function available on the European Patent Office Web site. A copy of the translation was provided in Attachment A to that response. Applicants are again providing a copy of the translation, this time as a separate document.

As requested by Examiner Sergent in the interview of August 25, 2009, below are calculations showing that for the examples in EP 325941 the weight ratio of true

dimer units/total of all components comprising isocyanate functions outside the range required by the instant claims.

Page 20, lines 11-12 of the specification states: "The true dimers are the compounds of general formula X above." The compounds of general formula (X) have the following structure, in which the ring structure is an uretidinedione:



(page 16, line 21 - Page 17, line 2)

The claims of the instant application require the weight of the true dimer units. As seen from the general formula (X) above, the true dimers include the group R'. The relevant examples in EP0325941 use HDI (hexamethylene diisocyanate). The R' group in HDI is a hexyl group (C₆H₁₂) which has a molecular weight of 84, [(12 x 6) + (1 x 12)]

The molecular weight of the dimer used in the relevant examples in EP0325941 has the formula (X), where each R' has a molecular weight of 84, is calculated as:

$$\begin{aligned}
 &[4 \times (\text{NCO})] + [2 \times \text{R}'] = \\
 &[4 \times (14 + 12 + 16)] + [2 \times 84] = \\
 &[4 \times 42] + 168 = \\
 &168 + 168 = 336
 \end{aligned}$$

The mass of the group C₂N₂O₂ represents 84/336 or 25% of the uretidinedione group. Therefore the mass of the uretidinedione group is four (4) times the percent mass reported for the uretidion [uretidinedione] content, which is reported for each of the relevant examples below.

Example 1

This example provides synthetic methods to produce 1,5-diaminoheptanol-6, which is used in producing compositions of later examples. No calculations are required for this example.

Example 2

NCO content - 23.5%

Uretidion content - 13%

The mass of the uretidinedione group is 4 times the mass of the uretidinedione content, or 52% of the mass of the composition ($13\% \times 4 = 52\%$).

The weight ratio of true dimer units/ total of isocyanate functions can be calculated by:

Example 3

NCO content - 23.7%

Uretidion content - 12%

The mass of the uretidinedione group is 4 times the mass of the uretidinedione content, or 48% of the mass of the composition ($12\% \times 4 = 48\%$).

Example 4

NCO content - 21.9%

Uretidion content - 5%

The mass of the uretidinedione group is 4 times the mass of the uretidinedione content, or 20% of the mass of the composition ($5\% \times 4 = 20\%$).

Example 5

NCO content - 23.8%

Uretidion content - 11%

The mass of the uretidinedione group is 4 times the mass of the uretidinedione content, or 44% of the mass of the composition ($11\% \times 4 = 44\%$).

Example 6

NCO content - 23.8%

Uretidion content - 8%

The mass of the uretidinedione group is 4 times the mass of the uretidinedione content, or 32% of the mass of the composition ($8\% \times 4 = 32\%$).

Example 7

NCO content - 24.3%

Uretidion content - 10%

The mass of the uretidinedione group is 4 times the mass of the uretidinedione content, or 40% of the mass of the composition ($10\% \times 4 = 40\%$).

Example 8

Example 8 provides a use of the composition of example 7 in a two-component paint composition. No calculations are required for this example.

The claims require that the weight ratio of true dimer units/ total of all components comprising isocyanate functions is $\leq 15\%$. However, as shown above, each of the examples in EP0325941 have a ratio of 20% or greater.

Claims 44 and 45 have been amended to clarify the claim by deleting the phrase "total of isocyanate functions is" and adding the phrase "total of all components comprising isocyanate functions is." Examples 4-6 and 10 provide a distribution of components (species) in the compositions.

The term "isocyanate functions", as used in the specification, means an isocyanate group. This meaning is found throughout the specification. The specification distinguishes an "isocyanate function" from "derived isocyanate function" as shown on page 22, lines 8-16.

Therefore, claims 44 and 45, the independent claims are not anticipated by EP0325941 because EP0325941 does not teach each element of these claims.

Applicants therefore request that this rejection be withdrawn.


Applicants therefore request that a Notice of Allowance be issued for these claims, as the previous Office Action indicated these claims were allowable, and the information provided above overcomes the rejection of the current Office Action.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By:



Gary D. Mangels, Ph.D.
Registration No. 55424

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620